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Effectiveness of infrared light therapy for arthritis pain

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ABSTRACT

Arthritis is the inflammation of or damage to the joint. Arthritis, though having a huge burden among the elderly, is not given the importance it deserves in public health. Arthritis may not directly lead to mortality, but influences the quality of life largely presence of arthritis in older adults was associated with more pain, functional limitation, and lower quality of life. The study was conducted to assess the level of pretest and posttest pain level and to assess the effect of infrared light therapy in the treatment of arthritis.

Keywords: Arthritis, Infrared light therapy

INTRODUCTION

A chronic joint disorder in which there is progressive softening and disintegration of articular cartilage accompanied by new growth of cartilage and bone at the joint margins and capsular fibrosis. Arthritis, though having a huge burden among the elderly, is not given the importance it deserves in public health. Arthritis may not directly lead to mortality, but influences the quality of life largely presence of arthritis in older adults was associated with more pain, functional limitation, and lower quality of life. Arthritis is the inflammation of or damage to the joint. Nearly 43 million Americans have some kind of arthritis. The symptoms and seriousness of arthritis vary widely. Researchers don't know what causes most kinds of arthritis. Chances are you or someone you know has arthritis or a related condition. Pain from arthritis can be ongoing or can come and go. Arthritis can affect

the muscles, organs and connective tissues. Infrared radiation is (of electromagnetic radiation) having a wavelength just greater than that of the red end of the visible light spectrum but less than that of microwaves. Infrared radiation has a wavelength from about 800 nm to 1 mm, and is emitted particularly by heated objects Multiple studies have shown that the infrared light therapy application for reduce the level of pain. Therefore, the purpose of this study was to assess the effectiveness of infrared light therapy treatment of arthritis considering the findings described in the literature, it is hypothesized a decrease of the pain in the arthritis client.

METHODOLOGY

An experimental study was chosen to assess the effectiveness of infrared light therapy among

arthritis clients. The present study was conducted at Mappedu. 30 samples both male and female who come under inclusion criteria were selected by purposive sampling technique, data was collected by using socio demographic variable and assessed the level pain was assessed by numerical pain scale. Pre –test level of pain assessed by using numerical pain scale, after infrared light therapy application, purpose was explained to the samples. Infrared light therapy applied for arthritis client. Then the post-test level of pain assessed by numerical pain scale. Compared to pre-test level of pain and post- test level of pain in arthritis client. The data were analyzed by using experimental and inferential statistics. Additionally, paired T test was performed to assess the effectiveness of the study.

TOOL FOR DATA COLLECTION

An experimental study was chosen to assess the effectiveness of infrared light therapy among arthritis clients. The present study was conducted at Mappedu. 30 samples selected under inclusion criteria were selected by purposive sampling technique, data was collected by using socio demographic variable developed by researcher and it deals with details such as age, gender, religion, education, occupation, marital status, economic condition. The tools were translated to Tamil language. As a part of the assess the level of pain by using numerical pain scale. The socio demographic data was collected and informed consent was obtained from the sample. The pretest level of pain was assessed by using numerical pain

scale. Application of infrared light therapy to the clients, then the posttest level of pain was assessed by using numerical pain scale. The data were analyzed by using experimental and inferential statistics. Additionally, paired T test was performed to assess the effectiveness of the study.

RESULTS

Out of 30 samples 5(18%) were 40-50years; 14(46%) arthritis client were 50-60; 9(30%) arthritis client were 60-70 years ; 2(6%) arthritis client were above 70years.Regarding sex out of 30 samples, 12(40%)arthritis client were males;18(60%) arthritis client were females. Regarding religion out of 30 samples, 26(87%) arthritis client were Hindu, 4(13%) arthritis client were Christian. Regarding education out of 30 samples, 11(36%) arthritis client were SSLC; 3(10%) arthritis client were 12th std; 16(54%) uneducated. Regarding occupation out of 30 samples , 3(11%) arthritis client were government ; 8(26%) nongovernment; 16(53%) unemployment; 3(10%) agriculture .Regarding economic status out of 30 samples , 10(34%) arthritis client were rich; 16(53%) medium;4(13%) poor.

Reveals that pre and post-test level of arthritis pain shows that the mean score of pre-test is 7.2 and the mean score of post-test is 2.7. Post –test mean value is lower than pre-test. The paired ‘t’ value found statistically significant, and it shows that infrared light therapy is effective to reduce the arthritis pain.

Table 1: Frequency and percentage distribution of demographic variables among arthritis clients.

S.NO	DEMOGRAPHIC VARIABLE	FREQUENCY (N)	PERCENTAGE (%)
1	AGE		
	a)40-50yrs	5	18%
	b)50-60yrs	14	46%
	c)60-70yrs	9	30%
	d)above 70yrs	2	6%
2	GENDER		
	a)Male	12	40%
	b)Female	18	60%
3	RELIGION		
	a)Hindu	26	87%
	b)Christian	4	13%
	c)Muslim	-	-
	d)Others	-	-
4	EDUCATION		

	a)SSLC	11	36%
	b)12 th standard	-	-
	c)Graduation	3	10%
	d)Nil	16	54%
5	OCCUPATION		
	a)Government	3	36%
	b)Private	8	26%
	c)Unemployed	16	53%
	d)Agriculture	3	10%
6	MARITAL STATUS		
	a)Married	30	100%
	b)Unmarried	-	-
	c)Divorced	-	-
7	ECONOMIC CONDITION		
	a)Rich	10	34%
	b)Medium	16	53%
	c)Poor	4	13%
	d)Very poor	-	-

TABLE 1: the table shows that out of 30 samples 5(18%) were 40-50years; 14(46%) arthritis client were 50-60; 9(30%) arthritis client were 60-70 years; 2(6%) arthritis client were above 70years.Regarding sex out of 30 samples, 12(40%) arthritis client were males; 18(60%) arthritis client were females. Regarding religion out of 30 samples, 26(87%) arthritis client were Hindu, 4(13%) arthritis client were Christian. Regarding

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Table 2: To determine the effectiveness of infrared light therapy among arthritis clients

TEST	MEAN	STANDARD DEVIATION (SD)
PRE-TEST	7.2	2.78
POST-TEST	2.7	1.76

TABLE 2 :Reveals that pre and post-test level of arthritis pain shows that the mean score of pre-test is 7.2 and the mean score of post-test is 2.7. post –test mean value is lower than pre-test. The

paired ‘t’ value found statistically significant ,and it shows that infrared light therapy is effective to reduce the arthritis pain.

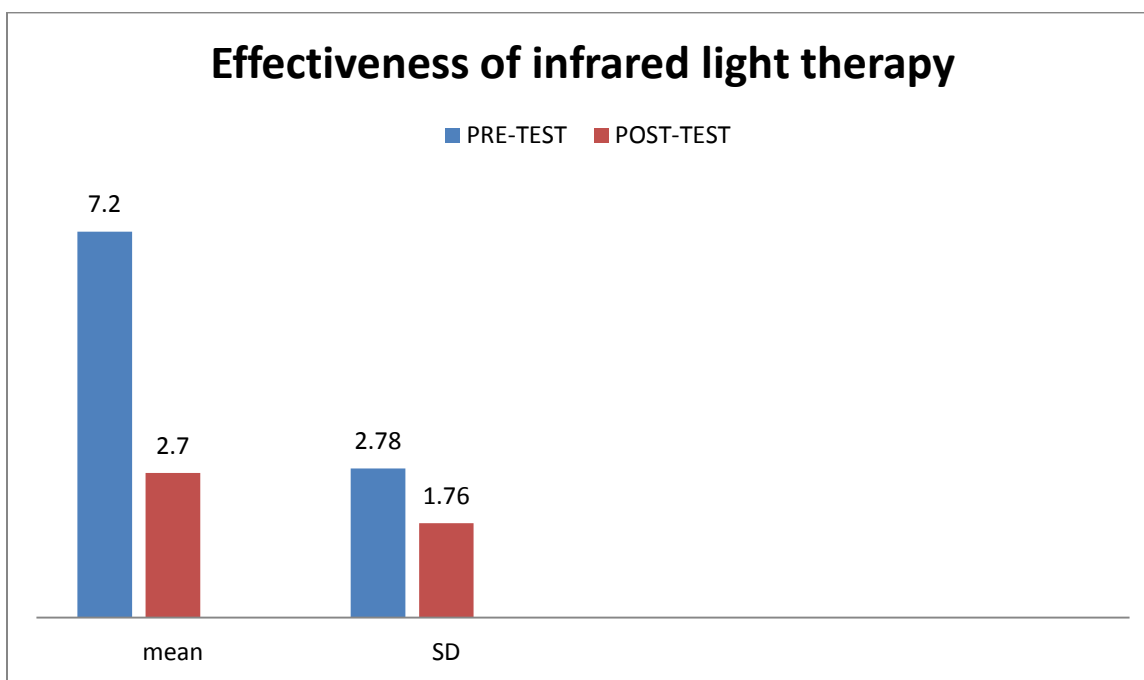


Figure-I

DISCUSSION

The present study assess the effectiveness of infrared light therapy for arthritis pain. the result samples 5(18%) were 40-50years; 14(46%) arthritis client were 50-60; 9(30%) arthritis client were 60-70 years ; 2(6%) arthritis client were above 70years.Regarding sex out of 30 samples, 12(40%)arthritis client were males;18(60%) arthritis client were females. Regarding religion out of 30 samples, 26(87%) arthritis client were Hindu, 4(13%) arthritis client were Christian. Regarding education out of 30 samples, 11(36%) arthritis client were SSLC; 3(10%) arthritis client were 12th std; 16(54%) uneducated. Regarding occupation out of 30 samples, 3(11%) arthritis client were government; 8(26%) nongovernment; 16(53%) unemployment; 3(10%) agriculture. Regarding economic status out of 30 samples, 10(34%) arthritis client were rich; 16(53%) medium;4(13%) poor. Reveals that pre and post-test level of arthritis pain shows that the mean score of pre-test is 7.2 and the mean score of post-test is 2.7. post – test mean value is lower than pre-test. The paired ‘t’ value found statistically significant ,and it shows that infrared light therapy is effective to reduce the arthritis pain.

In another study conducted by **Ebere Yvonne ihegihul et al** the combination of quadriceps strengthening, infrared radiation and oral diclofenac sodium was also superior to quadriceps

strengthening and infrared radiation alone, only in reducing knee pain intensity. However quadriceps strengthening and infrared radiation alone was superior to diclofenac sodium therapy alone in all outcome measures except reducing knee pain intensity. pain and stiffness decreased clinically, and improvement were statistically significant ($p < 0.05$ and $p < 0.001$ in RA and AS patients,)during an IR session.

A similar study was conducted by **Nihan Cuzdan Coskunl et al** the non-pharmacological modalities used for hand OA. Meta-analysis, systemic reviews, reviews and randomized controlled trails were included, where as single case reports and non-randomized studies were excluded.

This was accordance with studies conducted by **Aravind kumar singh et al** the prevalence of osteoarthritis among elderly is high and it majorly affects the quality of life. Knee osteoarthritis is the most common from of osteoarthritis. Community based cross sectional study among 496 elderly. The American college of rheumatology (ACR) criteria was used to clinically diagnose osteoarthritis knee.

This was accordance with studies conducted by **George D Gale et al** the 21 patients received IR therapy and 18 received placebo therapy. These units met safety standards for food and drug administration’s portability, the treated group

received IR therapy the pain was assessed overall, then rotating and bending in di fractions.

The present study also supported to the study findings of **John J Ross et a** lonely 50% adults with pneumococcal septic arthritis and another focus of pneumococcal infection, such as pneumonia. Functional outcomes were good in 95% patients. Uncomplicated pneumococcal septic arthritis can be managed with arthrocentesis and 4 weeks of antibiotic therapy.

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REFERENCE

- [1]. Verhagen AP, Bierma-zeinstra SMA, Cardoso JR, lambeck J, de bie RA, boers M, de vet HCW balneotherapy for rheumatoid arthritis.
- [2]. Isomaki H the sauna and rheumatic disease. Ann clin Res 20, 1988, 271-275
- [3]. Nurmikko T, Hietaharju A Effect of Exposure to sauna heat on neuropathic and rheumatoid pain. Pain 49, 1992, 43-51
- [4]. Philips (1998) bodycare and infrared. Philips, Eindhoven
- [5]. Lichet S physical therapy in arthritis. In: lehman JF therapeutic heat and cold. Williams & Wilkins, Baltimore, 3, 1982, 263-269
- [6]. Malzack r, katz J pain measurement in person in person in pain. In: wall PD, melzack R (eds) text book of pain. 3, 1994.
- [7]. Oosterveld FGJ, Rasker JJ treating arthritis with locally applied for heat are cold. semin arthritis Rheume 24, 1994, 82-90
- [8]. Steinbrocker O, Traeger CH, Batterman RC therapeutic criteria in rheumatoid arthritis. JAMA 17, 1949, 453-458
- [9]. Kirk JA , kersley GD heat and cold in physical treatment of rheumatoid arthritis of the knee Ann Phys Med 9, 1968, 270-274
- [10]. Aren't FC, Edworthy SM, Bloch AD et al the American Rheumatism Association 1987 revised criteria for the classification of rheumatoid arthritis 1988.

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